



REPORT

OF THE

Indian Tariff Board

ON THE

ANTIMONY INDUSTRY

सत्यमेव जयते



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GOVERNMENT OF INDIA, MINISTRY OF FINANCE

PERSONNEL OF THE BOARD

SIR R. K. SHANMUKHAM CHETTY, K.C.I.E.—PRESIDENT.

MR. C. C. DESAI, C.I.E., I.C.S.—MEMBER-SECRETARY.

DR. NAZIR AHMAD, O.B.E.—MEMBER.



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APPENDICES

- I. Government of India, Department of Commerce, Resolution No. 218-T(55)/45, dated the 3rd November 1945 24-26
- II. Sketch showing journey of the antimony ore from Chitral to Bombay.
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No. 218-T(55)/45, dated the 3rd November 1945, set up this Tariff Board for the purpose of investigating claims from industries, which were started or developed in wartime, or the starting of which was considered essential by Government under conditions created by the war, to assistance or protection during the transition period, that is, until the establishment of a permanent machinery to give effect to their tariff policy in the post-war period. Antimony is one of the industries covered by this Resolution (Appendix I).

2. The Board has to report whether the industry
Scope of Enquiry.

satisfies the following conditions:—

“ (1) that it is established and conducted on sound business lines ; and
(2) (a) that, having regard to the natural or economic advantages enjoyed by the industry and its actual or probable costs, it is likely within a reasonable time to develop sufficiently to be able to carry on successfully without protection or State assistance ; or

(b) that it is an industry to which it is desirable in the national interest to grant protection or assistance and that the probable cost of such protection or assistance to the community is not excessive. Where a claim to protection or assistance is found to be established, i.e., if condition (1) and condition (2) (a) or (b) are satisfied, the Board will recommend :

(i) whether, at what rate and in respect of what articles, or class or, description of articles, a protective duty should be imposed ;

(ii) what additional or alternative measures should be taken to protect or assist the industry ; and

(iii) for what period, not exceeding three years, the tariff or other measures recommended should remain in force.”

In making its recommendations the Board has been asked to give weight to the interests of the consumers in the light of the prevailing conditions and also to consider how its recommendations would affect industries using the articles in respect of which protection may be granted. The Board has further been requested to complete the inquiry with all possible expedition as relief where found necessary must be afforded without delay and before it becomes too late.

3. We have discussed in our report on calcium chloride how the terms of reference to this Board differ from those governing the Tariff Boards set up before 1939. It is unnecessary to traverse the same ground again in this report and it will be sufficient to recapitulate the main points. The conditions governing the eligibility of an industry for protection or assistance now are less hard and rigid than in the pre-war days. Government are embarking upon an extensive programme of industrialization for the implementation of which a liberal tariff policy is necessary in an under-industrialised country like India. As the action to be taken now will be part of a short range policy pending formulation of a permanent tariff policy, the criterion to be adopted would be that unless an industry started during wartime suffered from inherent economic handicaps incapable of being remedied,

4. On the 28th of November 1945, the Board issued a press communique, inviting associations, firms or persons, including producers, importers and consumers, directly interested in this industry, or dependent upon this industry for

Action taken. their raw materials, who wished their views to be considered by the Board, to submit their representations by the end of December 1945. The representations were required to be supported by facts and figures regarding, *inter alia*,

- (1) domestic demand for the commodity ;
- (2) volume and cost of imports ;
- (3) cost of production ;
- (4) general financial position of the producers ; and
- (5) the exact nature of protection or assistance applied for.

The Board also issued a printed questionnaire inviting detailed replies by the 15th March 1946. As there is only one factory producing antimony, namely, the Star Metal Refinery, Bombay, the inquiry was comparatively simple, though a certain amount of complication was introduced by reason of the fact that antimony is not what may be said to be a consumer article but a raw material needed in several other industries, such as type metals, bearing metals, alloys, battery plates, munitions etc. The Refinery was visited by the Board on the 25th February 1946 when we were taken round by Mr. Motichand Shah, one of the proprietors of the concern, and Mr. Schwarz, the Technical Adviser of the Company with whose help the factory is planned, designed, constructed and operated. It was not possible for the Board to visit the mine in Chitral in the North-West Frontier Province from where the antimony ore comes for being smelted and refined in Bombay. Oral evidence in the case was recorded in Bombay on the 19th, 20th and 21st March 1946. Besides the producers, the persons who were examined orally included representatives of firms who were interested in the import of antimony before the war, representatives of the Bombay Baroda and Central India and the Great Indian Peninsular Railways, who are large consumers of antimony, a representative of the bearing metal industry, a representative of the type metal industry, and a representative of the storage battery industry.

5. Before the war, antimony was not produced in India. The main source of supply was China, although a small quantity of higher-grade antimony was also imported from the United Kingdom for certain special uses. During the period of the war the Chinese source was cut off from India and antimony became in short supply and India had to look for its own source of supply. Before 1939, the only used Indian source of antimony was a deposit of ore near the Shigri Glacier in Lahaul (Kangra District, Punjab, railhead Pathanakot), which is reported to have been worked between 1905 and 1908. In 1905, about 15 tons of ore were shipped from India to the United Kingdom. Access to the site is difficult as all labour and supplies have to be transported over a pass at an altitude of 14,500 feet. The deposits are at an altitude of 13,500 feet and work is possible only for two or three months in the year. Fortunately, however, just about when the war started, a new antimony ore deposit, less inaccessible than the Lahaul deposits, was discovered at Shagor in the Chitral State, and a company was floated under the name of the

Chitral Mining Co., Ltd., for the exploitation of these deposits. The new mine is located approximately 13 miles north of Chitral and 175 miles from the nearest railhead, Durgai, beyond Peshawar. The mining operations take place at an altitude of approximately 7,500 feet. The ore is handpicked at the mine and carried to Durgai partly by lorries and partly on mule back which is the only means of transport for crossing a pass at an altitude of 10,200 feet. Since then, certain improvements have been made in quarrying, and tunnels and adits have been driven to facilitate the mining operations. The Mining Company, which is practically under the same management as the Star Metal Refinery, sells the ore to the Refinery which takes it over at Bombay and subjects the ore to further processes in order to convert it into "star metal" which is at least 99 per cent. pure antimony. Before the war, there was a small refinery in Calcutta, called the Napier Paint Works, which used to smelt antimony ore received from the Burma deposits, but with the fall of Burma the supplies of ore ceased and the factory has gone out of existence. The present inquiry has therefore been confined to the Chitral Mining Company and the Star Metal Refinery, Bombay. The Star Metal Refinery is a partnership concern, but it has been agreed by the management that they will have no objection to the concern being converted into a public limited company in case the industry is stabilised with State assistance.

6. The industry was set up under direct encouragement from the Supply Department which gave assistance in the matter of acquiring and constructing plant and machinery required by the Refinery. The entire output of the factory was placed at the disposal of the Central Government which released it from time to time against demands, giving priority to war demands. The industry submitted an application to Government in September 1944, pointing out that the industry was started during the war, that all raw materials including ore and chemicals were available in the country, that the productive capacity of the Refinery was more than sufficient to meet all normal requirements of the country, and that the industry should be protected from unfair competition by means of stoppage of imports. The application of the industry for protection and assistance was accordingly referred to the Board for investigation and report when the Board was set up to consider cases of wartime industries.

7. Antimony ore (or stibnite, as it is technically called and the chemical composition of which is antimony sulphide with traces of lead and copper) is brought from Chitral to Bombay where all the smelting processes take place. The antimony content in the Chitral ore is between 30 and 40 per cent. The first process in the production of antimony at present employed is what is called the "liquating" process. This process is preliminary to the next process called the "precipitation" process. In the liquation process, the ore in crushed condition is heated to about 550°C when the antimony sulphide becomes liquid and separates by gravity from the gangue of the ore. The liquated metal, called antimony crude, is collected in moulds and contains usually 71 per cent. antimony. During the liquating process, some of the antimony gets oxidised and evaporates, but all the antimony oxide is collected for recovery of as much of the metal as possible. The antimony crude is then treated by the precipitation method, which consists in the mixing of the crude with soda-ash and mild steel scrap in a proportion sufficient to extract all the sulphur in the crude. The freed antimony metal being heavier sinks or "precipitates", which gives the process its name. The precipitation metal, also known as "single", contains 90 to 98 per cent. antimony and is then subjected to

recovered oxides are treated in a reduction furnace with a view to extracting "single" which is then starred in the usual way.

8. The Refinery in its endeavours to reduce the cost of production constructed a blast-furnace, based upon pilot plant experiments which gave promise of satisfactory results, but it was found to be uneconomical when actually operated. The main difficulty appears to be the comparatively low recovery of antimony from stibnite by the blast-furnace method. The Refinery has been obliged to discard this method which involved it in a loss of over a lakh of rupees.

9. The firm has a plan for reducing the cost of production by installing a flotation plant at the minehead in Chitral and bringing to Bombay antimony crude with a 71 per cent. antimony content in place of the antimony ore with a 30 to 40 per cent. antimony content. It will be seen from our analysis of the cost of production later in the report that the main item in the cost of production is transport from the minehead to the railhead at Durgai; and therefore the installation of a flotation plant at the minehead will result in a very substantial reduction in the cost of production of the metal. An order for the plant has already been placed and delivery is expected shortly, but the plan of the Refinery is to operate the plant in Bombay until it is found to yield satisfactory results and then to transfer it to Chitral. Need for experiments and research on evolving alternative and economical processes is not lost sight of by the Refinery and some provision has been made for the same in calculating the cost of production.

10. The most important use of antimony is in the formation of alloys and the most important of these alloys are those with lead, tin and copper. The principal alloys in which antimony is used are

Uses.

- (1) type metals containing 11 to 30 per cent. antimony, 3 to 25 per cent. tin, and the remainder lead;
- (2) anti-friction bearing metals containing 6 to 18 per cent. antimony;
- (3) britannia metal which is an alloy of tin and antimony and which is used for cups, tankards and cheap artistic wares.

Antimony is also used in the grids of electrical storage batteries in alloy with lead. The use of antimony in munition production is in the manufacture of shrapnel bullets which consist of an alloy of 86 per cent. lead and 14 per cent. antimony. Antimony is also used in bullets for small arms. A number of antimony compounds are of commercial importance especially in the chemical industry and in the pharmaceutical industry. No data are available to allocate with any degree of accuracy the consumption of antimony among different users, but the following table shows the approximate distribution of antimony amongst various uses in normal times :—

	Percentage of total consumption.
Type metal	40
Anti-friction bearing metal	25
Storage batteries	15
Munitions production	5
Miscellaneous (drugs, chemicals, fire resistance paints, solders, electrical cables, toys, etc.)	10
Safety matches (in the form of crude antimony)	5
	<hr/> 100

11. As mentioned in the preceding paragraph, there are no statistics to show what the imports of antimony were before the war.

Imports.

China was the main supplier, the next being the United Kingdom. The figures of export of antimony from the United Kingdom before the war show only a small quantity being exported to all the British Possessions. For instance, the total quantity exported to all British Possessions was 52 tons in 1935, 57 tons in 1936, 55 tons in 1937 and 73 tons in 1938. Figures of later years are not available owing to the non-publication of statistics during wartime.

12. Import of antimony into India during wartime was controlled by the Director-General of Munitions Production. Figures made available by him show that 200 tons were imported in 1943, 150 tons in 1944 and 125 tons in 1945, the imports being mainly from the United Kingdom, only a small quantity being imported from the United States of America, probably under Lease/Lend.

13. The practice followed by Government was to take both the imports and the local production into consideration and to issue release orders in favour of essential industries, regard being had to the stocks. Preference was given to the disposal of local production, the imported metal being held in reserve for meeting emergencies. As a result of this policy, a reserve has been built up consisting of 50 tons which is at present in the possession of Government.

14. The Indian production of antimony is confined to only one factory, viz., the Star Metal Refinery, Bombay, production in which started in 1941. The figures of production are as follows :—

						Tons.
1941	..	..	..	..	..	56
1942	..	..	..	..	..	156
1943	..	..	..	..	..	130
1944	..	..	..	..	..	105
1945	..	..	..	..	..	157
1946 (up to end of March)	..	..	..	..	..	50

The Refinery in Bombay has been designed to produce 200 tons of antimony annually with a supply of 30 per cent. ore, though this target has not, for various reasons, been realised as yet and the production so far has not exceeded the figure of 160 tons. It is expected that in 1946, 200 tons would be produced, 50 tons having been produced in the quarter ending March 1946. The output can be stepped up even to 400 tons by the addition of two liquating furnaces, should the home demand necessitate such expansion. In fact the present equipment is sufficient to produce 500 to 600 tons of antimony per annum if ore of 70 per cent. purity is supplied as a result of the operation of the flotation plant in Chitral. There is no reliable estimate of the volume of ore deposits in Chitral, but it is presumed that the deposits are sufficient to last for a number of years. The deposits in the Kangra district which are not being worked are reported to be much larger.

15. As, before the war, there was no local production of antimony, the annual consumption can be judged from the quantities imported.

Annual consumption. Unfortunately, antimony is not shown separately in the sea borne trade statistics and we have therefore to depend upon records of importers and estimates of requirements made by the different consumers. It was represented to the Board by some of the importers that the average annual requirement of India of antimony before the war was in the neighbourhood of 1,000 tons but the Board has found it difficult to accept this figure as accurate or reasonable. The Board's estimate is between 250 and 300 tons per year. This is borne out by the fact that the type metal industry consumed an estimated quantity of between 80 and 100 tons a year which, it was estimated, represented nearly 40 per cent of the total consumption of antimony in the country. A close control on the distribution of antimony was exercised in wartime by the Director-General of Munitions Production in Calcutta who should therefore be in a position to estimate the requirements of the country in antimony. According to him also the probable future demand may be put down at between 200 and 250 tons. It may be that in wartime, owing to the relative shortage of other metals required for making alloys with antimony, there was a reduced demand for antimony, but as against that is the factor that the quantity required by railways and for munition production must have gone up owing to their larger activities. After taking all these factors into consideration, the Board estimates the probable future demand at about 300 tons per annum. It may be mentioned, however, that there is a possibility of the storage battery industry and the fire resistant paint industry being developed in the near future and if this happens the quantity of antimony required may be much larger.

16. Taking the imports and Indian production together during the last three years, for which, owing to the existence of control, dependable data are available, the annual supplies available come to 330 tons in 1943, 255 tons in 1944, and 282 tons in 1945. The existence of a reserve indicates that the annual consumption in the last three years could not have exceeded 250 tons.

17. *Cost of ore.*—The cost of production of antimony is divided into two parts, namely, cost of antimony ore and cost of conversion of the ore into metal. The products are handled by two separate companies, although there is unified control and management for all practical purposes. When the Supply Department entered into a contract for the supply of antimony by the Star Metal Refinery, the price at which the Refinery purchased the ore from the Mining Company was assumed as reasonable and the costing was confined to the accounts of the Refinery. The Mining Company sells the ore to the Refinery ex-Bombay at Rs. 510 per ton. The detailed breakdown of this figure is as under:—

	Rs.	
Mining and transport charges	341	per ton.
General services, supervision and head office charges.	90	„ „
Total cost of production ..	431	„ „

	Rs.	
Profit taken by the company at 10 per cent. of the cost of production.	43	per ton.
Selling price (at Durgai)	474	„ „
Railway freight from Durgai to Bombay ..	35	„ „
Cost ex-Bombay	509	„ „
Or in round figures ..	510	„ „

This is obviously a very high figure and constitutes the crux of the problem. The accounts of the Mining Company were subjected to a summary check but it was found that there was hardly any scope for reduction. The bulk of this amount (roughly Rs. 300 out of a total of Rs. 510) represents the cost of haulage by lorries and on mule back from the mine to the railhead. The only way to lower the costs would be to reduce the amount of ore to be transported and this would be done when concentration is undertaken at the minehead by installation of a flotation plant which is now on order. That improvement would bring about a reduction in the tonnage to be transported since the concentrated ore will be of 71 per cent. purity instead of 30 per cent. purity as at present.

18. *Cost of antimony previous to 1946.*—The accounts of the Star Metal Refinery have been cost-investigated more than once by the Supply Department. The first costing was carried out in September 1942 in respect of the output for the period from January 1941 to June 1942. The second costing was carried out in February 1943 for the metal produced during November and December 1942. A third costing has been recently carried out in respect of a particular campaign of 27 tons of antimony produced in the blast-furnace which was built with high hopes but which is being abandoned owing to its having proved an uneconomical proposition. The Board had the advantage of seeing these cost reports, copies of which were made available to it by Government with the previous consent of the Refinery. The Refinery also submitted statements showing both total cost of production and unit cost of production, the unit adopted being 1 cwt. The Refinery was asked to submit similar statements indicating the probable cost of production when the flotation plant is installed at the minehead and when every possible attempt has been made to bring down the present high cost of production. The Board also had before it the cost of production for 1946 as estimated by the Refinery. All these statements show that the cost of production per unit plus profit element was as follows:—

	Rs.	
1942-43	223.50	per cwt.
1943-44	301.25	„
1944-45	289.00	„
Average for the period of three years ..	272.18	„

is Rs. 92 per cwt. It may be pointed out at this stage that before the war the price of Chinese antimony was about Rs. 42 per cwt. and that it had risen to about Rs. 61 in the early days of the war when trade with China was still open. The price of English antimony was somewhat higher, being in the neighbourhood of Rs. 70 to Rs. 75 in the years between 1935 and 1938. The landed cost of English antimony during wartime ranged from Rs. 110 to Rs. 115 per cwt. Judging by the prices of foreign antimony before and during the war, the cost of production of Indian antimony is decidedly high. If there was no scope for reduction in the cost of production as shown at present, there would be no case for protection as it could not be said that the industry was likely to stand on its own legs ever in future without protection or assistance which would constitute an exorbitant burden on the consumers, particularly when the consumers happen to be other industries, such as type metal industry, bearing metal industry and storage battery industry. The future estimate of Rs. 92 is, however, hopeful and justifies the sustenance of the industry during the transition period in the course of which it should be possible to import the necessary plant and machinery and to instal it at the minehead as also to examine the feasibility of carrying out certain improvements such as construction of a 40-mile road over the Dir Pass at an altitude of 10,200 feet and the supply of power at low rates either through hydroelectric or other sources at Chitral. Even the estimate of Rs. 92 per cwt. representing the possible cost of production of an antimony from 1948 onwards is high and must, therefore, be still further reduced, particularly if the Chinese antimony again enters the international market at anything like the pre-war level of price. The price difference between the Chinese antimony and English antimony was of the order of Rs. 10 to Rs. 15 per cwt., the Chinese antimony being cheaper but of less dependable quality.

19. *Estimated cost in 1946.*—The statement below gives an estimate of the cost of production as given by the firm for the year 1946, the output being assumed to be 200 tons :—

	Per cwt. In rupees.
<i>I. Manufacturing expenses :—</i>	
(1) Raw materials—	
(a) Antimony ore	127.50
(b) Soda ash, iron scrap, etc.	4.60
(2) Power and fuel	12.45
(3) Ordinary current repairs and maintenance of buildings, plant and machinery	4.00
(4) Labour	15.00
(5) General services, supervision, and local office charges	12.00
(6) Expenditure on quality control, research and development .. .. .	....
(7) Packing charges	1.50
(8) Miscellaneous, water, lighting, royalties, etc. ..	

II. Overhead charges :—

(9) Depreciation	..	..	7.00
(10) Interest on borrowed capital	..	..	0.56
(11) Managing Agents' charges	..	..	3.20
(12) Directors' and Auditors' fees	..	..	....
(13) Insurance	..	..	0.85
(14) Rents, rates and taxes, excluding income-tax and royalties	..	..	1.00
(15) Selling expenses	..	..	....
(16) Miscellaneous	..	..	....
(17) Head office expenses	..	..	5.00
			<hr/>
			17.61

Grand total (I and II) .. 194.66

Add—as profit .. 20.00

Net total .. 214.66

20. Each item of the above cost statement was carefully scrutinised by the Board and reductions have been made wherever possible. The antimony ore which is taken by the Refinery at Rs. 510 per ton has been calculated by us at the rate of Rs. 490 per ton, the figure having been revised by allowing a smaller profit on the block and working capital. The Mining Company had calculated a profit of 10 per cent. on the estimated cost of production which worked out to Rs. 431 per ton, whereas the Board has allowed only Rs. 25 per ton calculated as under :—

Fixed capital consists of Rs. 1.25 lakhs invested at the mine plus Rs. 0.5 lakh representing the share to be debited to antimony on the value paid for the mining concession. A profit of 10 per cent. has been allowed on this figure of Rs. 1.75 lakhs giving a sum of Rs. 17,500. The working capital comes to Rs. 2 lakhs on which a return of 4 per cent. has been permitted, thus allowing a sum of Rs. 8,000. The total comes to Rs. 25,500 or, in round figures, Rs. 25,000. The estimated production of the ore is 1,000 tons, just sufficient to yield 200 tons of antimony metal. It gives a profit of Rs. 25 per ton in so far as the ore is concerned. The total cost of the ore is thus as follows :—

	Rs.	
Cost of mining	.. ..	431 per ton of ore.
Profit of the Mining Company (as against Rs. 43 assumed by the firm in calculating the existing price of Rs. 510 per ton)	.. ..	25 „ „
		<hr/>
Total (at the railhead Durgai)	..	456 „ „
Railway freight from Durgai to Bombay	..	35 „ „
		<hr/>
Total	..	491 „ „
Or in round figures		490 ..

Assuming that 1,000 tons of ore are required for 200 tons of antimony, the cost of antimony ore per cwt. would, under the revised calculation, be Rs. 122.50 per cwt. as against Rs. 127.50 estimated in the statement of the Refinery. The Refinery has estimated Rs. 12 per cwt. under "General services, supervision and local office charges," on the basis of an expenditure of Rs. 48,000 for the year as a whole. The Board went into the details of this expenditure and is satisfied that it is capable of reduction. Half the amount is spent on the remuneration of the Technical Adviser, which is regarded by the Board as unreasonably high. The suggestion of the Board that the expenditure under this item should be reduced to Rs. 40,000 has been accepted by the Refinery, thus enabling the unit cost to be reduced from Rs. 12 to Rs. 10 per cwt. Nothing had been shown under the item "Quality control, research and development," although some expenditure is actually incurred. The Board considers that the expenditure under this item should be separately shown and that the research activities should be increased if the cost of production is ultimately to be brought down and the industry is to survive under normal conditions either without protection or with the minimum degree of protection. On an estimated annual output of 200 tons, an expenditure of Rs. 12,000 would be justified and therefore the Board has allowed Rs. 3 per cwt. in the statement of cost of production approved by it. The interest on borrowed capital is omitted as profit is allowed on both the fixed capital and the working capital at the end of the statement. The statement submitted by the Refinery includes a provision of Rs. 3.20 per cwt. as Managing Agents' charges. This figure should, according to the Refinery itself, have been Rs. 3.00 instead of Rs. 3.20. It was explained that this remuneration was claimed by the two partners who are in administrative charge of the work of the Refinery and who are devoting a considerable portion of their time to the affairs of the factory. The Board, however, has taken the view that the Managing Agents were already remunerated by way of a return on the capital invested by them in the concern and that fairly substantial sums were being spent on technical advice and general supervision, making it difficult to justify an additional charge of Rs. 12,000 per annum. The Managing Agents have agreed to delete this item. Under the item "Head office expenses," a sum of Rs. 5 per cwt. had been provided giving a total expenditure of Rs. 20,000 which the Board has found it difficult to accept. After discussion it has been agreed that the amount could be reduced to Rs. 12,000, thus reducing the unit cost from Rs. 5 to Rs. 3 per cwt.

21. Based on the above calculations, the Board estimates the cost of production in 1946 as follows :—

I. Manufacturing expenses :—	Rs. per cwt.
(1) Raw materials—	
(a) Antimony ore	122.50
(b) Soda ash, iron scrap, etc.	4.60
(2) Power and fuel	12.45
(3) Ordinary current repairs and maintenance of building, plant and machinery	4.00

			Rs. per cwt.
(6) Expenditure on quality control, research and development	..	..	3.00
(7) Packing charges	..	..	1.60
(8) Miscellaneous, water, lighting, royalties, etc.	..	..	....
	Total	..	173.05
<i>II. Overhead charges :—</i>			
(9) Depreciation	..	..	7.00
(10) Interest on borrowed capital	..	..	....
(11) Managing Agents' charges	..	..	....
(12) Directors' and Auditors' fees	..	..	....
(13) Insurance	..	..	0.85
(14) Rents, rates and taxes, excluding income-tax and royalties	..	..	1.00
(15) Selling expenses	..	..	....
(16) Miscellaneous	..	..	....
(17) Head office expenses	..	..	3.00
	Grand Total (I and II)	..	184.90
	Or	..	185.00

The Board's estimate is thus Rs. 185 per cwt. as against the firm's estimate of Rs. 194.66 per cwt.

22. As the recommendations of the Board cover a period of three years we have tried to estimate what the cost of production would be over the whole three-year period. We found that the only item in which any substantial change could be effected was raw materials, the cost of which would depend upon the installation of the flotation plant at Chitral. We went into this matter in some detail with the Company but we could not form any accurate estimate of the time when the flotation plant would be in full working order in Chitral. The plant is on order, and at one time delivery was promised in November 1945 and later in April 1946, but the latest advice received by the firm is that shipping is not expected until June. Even if the plant is received in Bombay by September, the intention of the Company, to which we cannot take objection, is that it should be installed at the Refinery in Bombay where it should be worked for a few months until the plant is found to be in satisfactory working order. For a certain period of the year, the tract between Peshawar and Chitral is closed to all traffic and it is only when the road is thrown open that the plant could be shifted to Chitral. It therefore seems that the earliest period by which the plant could be installed at Chitral would be June or July 1947. The ore concentrated thereafter may become available for being smelted in Bombay some time in 1948. It therefore follows that there would be no change in the cost of production in 1947 but that a fall may be expected in 1948 if all operations proceed according to plan. For the present, therefore, we have considered it reasonable to assume the present cost of production for the entire period, including 1948. But in view of the possibility of a reduction in the cost of production some time in 1948, we recommend that the position should be reviewed towards the end of 1947, by when it will be clear whether any allowance could be made for reduced cost of production.

23. Although it is outside our province to make any recommendation as to what should be done after 1948, it is relevant to examine the possible cost of production after 1948, to establish the case for protection, if for no other purpose. The Refinery has submitted its estimate of cost of production after 1948, which is reproduced below :—

STATEMENT SHOWING COMPANY'S ESTIMATE OF COST OF PRODUCTION PER UNIT
WHEN FLOTATION PLANT IS INSTALLED IN CHITRAL (i.e. AFTER 1948)

<i>I. Manufacturing expenses :—</i>				Rs. per cwt.
(1) Raw materials	..	..	..	50.70
(2) Power and fuel	..	..	..	4.00
(3) Ordinary current repairs and maintenance of buildings, plant and machinery	..	..	..	3.00
(4) Labour	..	..	..	6.00
(5) General services, supervision and local office charges	..	..	..	10.00
(6) Expenditure on quality control, research and develop- ment	..	..	..	....
(7) Packing charges	..	..	..	1.00
(8) Miscellaneous, water, lighting, royalties, etc.	..	..	..	....
Total			..	74.70
<i>II. Overhead charges :—</i>				
(9) Depreciation	..	..	..	7.03
(10) Interest on borrowed capital	..	..	..	0.54
(11) Managing Agents' charges	..	..	..	3.00
(12) Directors' and Auditors' fees	..	..	..	....
(13) Insurance	..	..	..	0.82
(14) Rents, rates and taxes, excluding income-tax and royalties	..	..	..	0.96
(15) Selling expenses	..	..	..	....
(16) Miscellaneous	..	..	..	....
(17) Head office expenses	..	..	..	4.90
				17.25
Grand Total (I and II)			..	91.95
Credit for materials recovered, if any			..	Nil.
Net Total			..	91.95

It will be observed that the Company expects that the cost of production of antimony with concentration of ore at Chitral would be in the neighbourhood of Rs. 92 per cwt., to which profit will have to be added to arrive at a reasonable selling price. We have scrutinised this estimate and have made certain reductions which would place the cost of production at Rs. 83.31 per cwt. which, together with profit at Rs. 4.7 per cwt. would give a reasonable selling price at Rs. 88.01 per cwt. Our estimate of the cost of production of 100 cwt. of antimony from 1949 onwards is given below :—

<i>I. Manufacturing expenses :—</i>				Rs.
(1) Raw materials	..	..	..	48.00
(2) Power and fuel	..	..	..	4.00
(3) Ordinary current repairs and maintenance of buildings, plant and machinery	..	..	..	3.00
(4) Labour	..	..	..	6.00
(5) General services, supervision and local office charges	..	..	..	8.50
(6) Expenditure on quality control, research and development	..	..	..	1.50
(7) Packing charges	..	..	..	1.00
(8) Miscellaneous, water, lighting, royalties, etc.	..	..	..	1.00
Total				72.00
<i>II. Overhead charges :—</i>				
(9) Depreciation	..	..	..	7.03
(10) Interest on borrowed capital	..	..	..	..
(11) Managing Agents' charges	..	..	..	..
(12) Directors' and Auditors' fees	..	..	..	..
(13) Insurance	..	..	..	0.82
(14) Rents, rates and taxes, excluding income-tax and royalties	..	..	..	0.98
(15) Selling expenses	..	..	..	..
(16) Miscellaneous	..	..	..	..
(17) Head office expenses	..	..	..	2.50
Total				11.31
Grand Total (I and II)				83.31
Add—Profit				4.70
Net Total (selling price)				88.01

It will be seen from the above estimate that the cost of production from 1949 onwards will not be much above the present c.i.f. price of English antimony or

24. We shall now determine the price that should be assured to the home manufacturer in the period 1946-48. We have allowed

Fair selling price. a profit of 10 per cent. on the gross block account and of 4 per cent. on the working capital. The gross block account of the Refinery is Rs. 3 lakhs on which a return of Rs. 30,000 would thus be admissible. This return cannot be considered excessive in the conditions of to-day, with all the high charges of income-tax and company tax at present prevailing. The working capital of the Refinery is Rs. 2½ lakhs on which a profit at the rate of 4 per cent. would come to Rs. 10,000. The total profit thus comes to Rs. 40,000 on an output of 20 tons, i.e. 400 cwts. of antimony. The per cwt. rate works out to Rs. 10. The cost of production as approved by the Board comes to Rs. 185 per cwt. and, if the profit of Rs. 10 per cwt. is added to this, the fair selling price would come to Rs. 195 per cwt. If the output of the Refinery should increase to cope with the increased home demand, there should be a further reduction in the cost, although it is appreciated that there would not be a substantial reduction inasmuch as more than 50 per cent. of the cost of production is represented by raw materials, the cost accounted for by overheads being relatively less. While this is the fair selling price on the basis of cost of production, we do not propose that the consumers should be required to pay this price for reasons which will be explained presently.

25. Before the war, China was the main source of supply of antimony, only a small quantity coming from the United Kingdom. The

Cost of import. c.i.f. price of Chinese antimony before 1939 was about Rs. 35 per cwt., the selling price being Rs. 42 per cwt.

There was a duty of 25 per cent. on antimony. In the early days of the war, the c.i.f. price of Chinese antimony was about Rs. 49 per cwt. and the selling price Rs. 61 per cwt. The c.i.f. price of English antimony before the war was about Rs. 60 per cwt. and during the war Rs. 83 per cwt. It is impossible to forecast what the future price level of Chinese and English antimony is likely to be, but we feel that, in so far as the immediate period of three years is concerned, it will be reasonable to proceed on the assumption that the United Kingdom will be the main source of supply and that there will be no substantial change in the present c.i.f. price of English antimony. We, therefore, propose to adopt Rs. 83 as the c.i.f. price of imported antimony for the period of protection which we contemplate for the present for the home industry. To this a charge of Re. 1 per cwt. may be added as the port and landing charges; the landed cost, ex duty, of the imported antimony, therefore, comes to Rs. 84 per cwt.

26. It has been mentioned earlier in the report that antimony is largely used in the manufacture of certain industrial products such as bearing metals, type metals, and storage battery plates. These industries, though small by themselves, yet play an important part in the country's industrial set-up. In some of these industries, the incidence of the cost of antimony is fairly substantial, type metal being the best example. Representatives of these industries have forcibly brought to the notice of the Board the desirability of keeping the price of antimony as low as possible, lest while giving protection to antimony, the consuming industries may be adversely affected. There is every danger that, if the cost of antimony

importance of the price of antimony in the price structure of type metal. Similarly in the case of the storage battery industry, the price of antimony will have a substantial effect on the price of battery. One 6 volt battery requires 28 ounces of antimony; i.e., antimony represents 6 per cent. of the cost of a battery. It has been calculated that the difference in the price of a battery would be between Rs. 2 and Rs. 3 if the price of antimony were to be raised from the present possible cost of importation of Rs. 113 per cwt. to, say, Rs. 195 per cwt.—the estimated cost of production of the home metal. It is clear that antimony being a raw material must be made available to the consuming industries at a reasonable price notwithstanding its high cost of production in India. The ideal would be to fix its price so as to be in parity with the cost of importation in India, if not with the international price level. We have shown in an earlier paragraph that the c.i.f. price of antimony during the next three years may be reasonably taken at Rs. 83 per cwt., thus leaving a very wide gap between the c.i.f. price and the cost of indigenous production to be bridged.

27. After giving the matter most careful consideration, the Board has come to the conclusion that the selling price to the consumer during the next three years should be not higher than Rs. 150 per cwt. Making antimony available at this price should not endanger the consuming industries or expose them to the risk of import of finished product from abroad. Even then, the position will have to be constantly watched, a duty which should devolve on both customs authorities and the producers, and should any tendency be discerned favouring imports of finished products of any of these consuming industries, the position should be re-examined by Government. It is a recognised practice in all highly industrialised countries to make virgin metal available to consuming industries at even below cost of production, by resorting, if necessary, to methods of subsidisation and we think that a similar policy should be adopted in this country in regard to antimony. We have reason to think that if antimony is made available to consuming industries at about Rs. 150 per cwt., they will not be seriously affected. It may be noted that this price of Rs. 150 per cwt., is only slightly above the existing Government issue rate of Rs. 143 and only about Rs. 35 more than the price of antimony if it was allowed to be imported by private importers. It is just about double the pre-war price of English antimony which cannot be regarded as an unreasonable proportion. In the case of the type metal in which lead is an important ingredient, availability of antimony at Rs. 150 per cwt., would still leave the cost of production of type metal well below the c.i.f. price of the same, owing mainly to the removal of duty on lead recently announced in the budget of the Central Government. The Board is satisfied at the same time that it is not desirable to fix the selling price of antimony during the next triennium above Rs. 150 per cwt.

28. Consuming interests who were examined had nothing to urge against the quality of the indigenous product. Railways which are important consumers of antimony have testified to the quality of Indian antimony. The type metal industry is satisfied especially in view of the lead content of Indian antimony. Some doubt was expressed by the storage battery industry in view of traces of iron in the local antimony which is harmful to battery plates but it has been explained by the Refinery that this defect is capable of being removed. We have reason to believe that the Indian antimony is superior to

29. The quality of the Indian product being established, there can be no justification for Government to depend for its own requirements on import from abroad. The Government, including Railways and Ordnance Factories, should buy all its requirements from the Indian factory at the target price.

30. Owing to the development of production of antimony in India, there is at present a total embargo on import of antimony. Since the stock of antimony held by Government together with the indigenous production is sufficient to meet the home demand and import control is still in operation, we recommend that the embargo on import of antimony should continue for the remainder of 1946 after which imports may be permitted subject to the protective duty recommended by us.

31. We have estimated for the period of the next three years what may be expected to be the landed cost ex duty of imported antimony and what should be the fair selling price that is, the price to be allowed to the home manufacturer. The former comes to Rs. 84 per cwt., and the latter comes to Rs. 195 per cwt. We have also indicated how consuming industries would be adversely affected if Indian antimony were, under a system of protection, to be made available to them at a price of Rs. 195 per cwt., while the comparative world price would be less than half. We have recommended that the price to the consumer during the next three years should be not more than Rs. 150 per cwt. That gives an idea as to what the measure of protection should be. Deducting the landed cost ex duty of Rs. 84 from the target price of Rs. 150 per cwt., for the consumer, we get a figure which should be made up by the imposition of a protective duty. That figure comes to Rs. 66 per cwt. Ordinarily, in accordance with the practice followed by the previous Tariff Boards as also by the present Board, the protective duty should be Rs. 66 per cwt. In the present case, however, we are recommending a duty of only Rs. 60 per cwt., in view of certain important considerations which are detailed below. Firstly, it is usual for an importer to add a profit margin, which happens to be roughly 5 per cent. in antimony, to the landed cost before working out his selling price. The total landed cost in accordance with our recommendation would be roughly Rs. 144 per cwt.; made up of Rs. 83 c.i.f. price, Re. 1 landing charges and Rs. 60 customs duty. Adding a profit margin of 5 per cent on the landed cost we would get the importer's selling price at Rs. 151 as against our target selling price of Rs. 150 for the indigenous production, thus giving a narrow marginal advantage to the home manufacturer. If the full duty of Rs. 66 per cwt., were levied, the importer's selling price would have been Rs. 157 per cwt., which would have left a bigger cushion on which the home producer might have operated so as to inflate his price beyond Rs. 150 per cwt. Secondly, antimony is mainly used in alloys and other industries in some of which the incidence of the cost of antimony is quite considerable. We cannot, therefore, contemplate a position in which the price of antimony to the consumer may incline to exceed Rs. 150 per cwt. Thirdly, the case of the antimony industry

to encourage inefficiency or even indifference in regard to improvements, cost of production, and progressive management. It is for these reasons that we consider that a specific duty of Rs. 60 per cwt., should afford reasonable protection against importation of the foreign product. The specific duty on antimony crude which contains 70 per cent. antimony should be Rs. 52 per cwt. Apart from being a better means of protection, we prefer a specific duty to an *ad valorem* duty as there is no wide variation in the quality of antimony, star metal being over 99 per cent. pure. In recommending this specific duty of Rs. 60 for star antimony and Rs. 42 for crude antimony, we have assumed that the c.i.f. price would be Rs. 83 per cwt. If, however, the c.i.f. price of imported antimony falls below Rs. 80 per cwt., or goes above Rs. 90, we recommend that Government should take executive action to enhance or lower the protective duty, as the case may be, in accordance with section 4 (I) of the Indian Tariff Act, 1934, so as to maintain the protection intended for the home manufacturer and to ensure a reasonable price to the consumer.

32. We have recommended that the price to the consumer should not be above Rs. 150 per cwt., although the cost of production plus profit permissible to the local production would come to Rs. 195 per cwt. The local producer cannot, of course, be expected to suffer a loss and sell his product at below cost of production. This would result in the closing down of the factory and the extinction of the industry. It is also impossible to contemplate a price of Rs. 195 per cwt., in view of the interests of the other consuming industries. The only alternative available is for Government to make up the balance between Rs. 195 and Rs. 150 by way of a subsidy until such time as the industry is able to face competition assisted only by a moderate amount of protective or revenue duty. We have pointed out previously that this position should be arrived at some time in 1948 or 1949 and therefore the State would be justified in giving a subsidy to enable the industry to tide over the transitional period. The amount of subsidy that would be payable would be reduced, though very slightly, by reason of the fact that Government holds a stock of antimony imported at comparatively low cost and being sold at present at Rs. 143 per cwt. The stock, we are advised, is 50 tons. Our recommendation is that the Government stock should be made over to the Star Metal Refinery at the present issue rate of Rs. 143 per cwt., and the Refinery should be asked to sell the entire stock, both imported and indigenous, at one pool price, viz., Rs. 150 per cwt. By adopting this procedure, no loss will be involved to Government in so far as the existing stock is concerned, the consumers will be enabled to get their essential raw material at a price which would not seriously handicap them in the cost of manufacture of their products and the amount of subsidy which the indigenous antimony industry may expect to receive from Government on the basis of our calculations will be somewhat reduced. The quality of the local production and of the imported

33. Proceeding on the assumption that effect will be given to the above recommendations by the beginning of the second half of this year, that is, 1946, we work out the amount of subsidy as under :—

I.

Year.			Production in tons.	Production in cwt.	Price to be allowed to producer.	Total cost to producer.
1946	..	..	100	2,000	195	3,90,000
1947	..	..	200	4,000	195	7,80,000
1948	..	..	200	4,000	195	7,80,000
1946-47-48	..	..	500	10,000	195	19,50,000

II. Realizations by sale—500 tons or 10,000 cwt., at Rs. 150 per cwt., total Rs. 15,00,000.

III. Loss on total output of 500 tons at Rs. 45 per cwt., Rs. 4,50,000.

IV. Government stock of 50 tons or 1,000 cwt. being sold by Refinery at profit of Rs. 7 (Rs. 150 selling price less Rs. 143 cost price)—Rs. 7,000.

V. Net loss to producer Rs. 4,50,000 minus Rs. 7,000—Rs. 4,43,000 to be made up by subsidy on 500 tons or 10,000 cwt.

VI. Subsidy per cwt. comes to Rs. 44.3 which the Board propose to reduce to Rs. 40 per cwt., so as to make it into a round figure. The firm will thus be deprived of Rs. 43,000 till the end of 1948 which we consider to be a salutary proposal as it should spur the firm to improve its process and to secure reduction in cost of production during the period.

34. The subsidy should be paid at the end of each year on the basis of sales made during the year. The subsidy for the years 1946 and 1947 should be guaranteed at the rate of Rs. 40 per cwt. but a stipulation should be laid down that the subsidy for the year 1948 will be determined in the light of the conclusions reached on a review of the position which would be undertaken towards the end of 1947. If production goes up, the subsidy will have to be reduced. If the cost of production is reduced, the subsidy will be liable to be reduced. If the industry has not taken all possible steps to expedite the

Review of position in 1947.

35. In view of our recommendation for grant of protection or assistance to the antimony industry by means of a heavy tariff on imports and a substantial subsidy for home production, we consider it desirable that during the period of protection or assistance some machinery should be devised which would enable Government to keep a constant watch on the activities of the concern engaged in the production of antimony. If the firm of Star Metal Refinery were a public limited company, we would have recommended that payment of the subsidy should be made contingent upon the appointment by Government of a Director on the Board of Directors having the same rights and privileges as the other Directors of the company. The Star Metal Refinery, however, is at present a partnership concern and there is thus no scope for the appointment of a Government Director. As an alternative, therefore, we recommend that Government should appoint a senior officer as Inspector who will have the same access to the factory and to the papers, documents and records of both the Mining Company and the Refinery as the partners, who will be in a position to report to Government from time to time as to what efforts the firm is making to go ahead with plans of improvement and to attain reduction in the cost of production and who will ensure that the burden which the community is called upon to bear in respect of this industry is justified. The Inspector should pay a visit to the works and meet the partners at least once a quarter and should also visit the mines. All his reports should be preserved so as to be available to the Tariff Board when the case of the industry comes again for review in 1947.

36. Assuming that the sales up to the end of 1948 period will amount to 500 tons, the subsidy payable by Government will come to Rs. 4,00,000. On the credit side, when the imports are thrown open, some revenue may be realised through the protective duty of Rs. 60 per cwt., on imports. For instance, if 330 tons were to be imported till the end of 1948, the revenue duty realised will be almost equal to the amount spent by Government over subsidy. The eventuality of import of 330 tons is, however, not likely to materialise. In the first place, we have said that no import licences should be granted for the second half of 1946. In pre-war days, the United Kingdom did not export more than 50 tons of antimony to India per annum. It is impossible to say what the imports from China would be. If a small quantity is imported from China, it is possible that it would come at a lower c.i.f. price than Rs. 83 per cwt., which would enable Government to raise the protective duty from Rs. 60 to a higher figure thus enabling Government to realise a larger revenue by way of customs duty on imports from China. On the whole, however, we are of opinion that the debit side will exceed the credit side and that the subsidy will outweigh revenue from customs. This will have to be treated as a contribution by the State towards the development of an important industry which will make the country self-sufficient in respect of a raw material required, *inter alia*, for munition production.

37. The criteria laid down by Government for eligibility for protection or assistance have been referred to in paragraph 2 of the report. The first condition to be fulfilled is that the

efficient. Proper attention is being paid to experimentation, research and pilot plant work. It was not possible for the Board to pay a visit to the mine. The management has shown enterprise in setting up a new and difficult industry in the country and has not hesitated to incur expenditure over alternative methods of production with a view to saving in costs, e.g., the blast furnace. The management has gone ahead with the order for a flotation plant although the future of the industry could not have appeared too bright at the time.

38. The second condition to be fulfilled is that, having regard to the natural or economic advantages enjoyed by the industry and its actual or probable costs, it is likely within a reasonable time to develop sufficiently to be able to carry on successfully without protection or State assistance. The industry enjoys natural advantages in the sense that the raw materials required are available in the country though they have to be procured from inaccessible tracts and at very high cost. As against this, it is possible that the development of an industry in an inaccessible tribal tract like Chitral will afford certain other advantages which it would not be desirable for the State to overlook. In any case, there is reason to believe that with the mechanisation of the mine and concentration of the ore at the minehead, the cost would be brought down to a reasonable figure at which it would be possible for the industry to compete with a minimum of protection against foreign imports. We would, therefore, say that this condition is also fulfilled.

There is an additional reason why this particular industry should be protected. Antimony is a metal used in munition production and, therefore, it can be said that the establishment of the industry in India is in the national interest. This fact is proved by the experience gained during the last four years.

Recommendations.

39. Our recommendations may be summarised as under :—

(1) Embargo on import of antimony from abroad should continue for the remainder of 1946 (paragraph 30 of report).

(2) Government stock of 50 tons should be made over to the Refinery at the Government issue rate of Rs. 143 per cwt. (paragraph 32).

(3) The Refinery should give an undertaking that from the 1st June 1946 all antimony will be sold at a common pool price of Rs. 150 per cwt., whether it be local production or part of Government stock transferred to the Refinery (paragraph 32).

(4) A protective duty of Rs. 60 per cwt., should be levied for a period of two years with effect from the 1st January 1947 on all imports of star antimony (paragraph 31).

(5) The specific duty of Rs. 60 per cwt., should be modified under section 4 (1) of the Indian Tariff Act of 1934 in the light of any variation in the c.i.f. price of star antimony imported from anywhere above Rs. 90 or below Rs. 80 per cwt. (paragraph 31).

(6) A subsidy of Rs. 40 per cwt., should be paid to the Refinery in respect of actual sales in 1946 (past six months), 1947 and 1948, subject to a maximum of 100, 200 and 200 tons respectively. The maximum subsidy payable would thus be Rs. 80,000 in 1946, Rs. 160,000 in 1947 and Rs. 160,000 in 1948. The rate of subsidy for the years 1946 and 1947 should be guaranteed, but that for the year 1948 should be subject to a review of the position which should be

undertaken towards the end of 1947. The review should particularly refer to installation of a flotation plant at the minehead and consequential reduction in the cost of ore and ultimately in the cost of antimony (paragraphs 33 and 34).

(7) The Central Government in the Department of Industries and Supplies should give every assistance to the Mining Company to secure a generating plant for working the flotation plant at the minehead (paragraph 18).

(8) The Central Government in the Department of Labour should examine the feasibility of constructing a road 40 miles in length over the Dir Pass between Peshawar and Chitral, construction being justified if the road will also serve other purposes than reducing the cost of antimony ore mined at Chitral (paragraph 18).

(9) The review to be undertaken in 1947 should also examine whether the Company should then be asked to constitute itself into a public limited concern if its stability is assured as a result of State protection or assistance (paragraphs 35 and 5).

(10) Even when imports are thrown open, Government requirements of antimony should be met from the indigenous production. Government requirements should include Railways as well as Ordnance Factories. This policy should not be modified on the ground that the price of imported material is lower than that of Indian production (paragraph 29).

(11) There should be a separate head in the Tariff Schedule relating to antimony and antimony crude. The specific duty on antimony crude should be 70 per cent. of the duty levied on antimony metal (paragraphs 11 and 31).

(12) A circular letter should be issued to Collectors of Customs asking them to keep a watch on imports of antimony and antimony crude from abroad with special reference to the c.i.f. prices at which such imports come into the country. A report should be made immediately to Government when the c.i.f. price falls below Rs. 83 per cwt., for antimony (paragraph 27).

(13) A Government Inspector should be appointed to maintain watch over the affairs of the firm during the period of protection (paragraph 35).

40. In conducting the oral examination, in preparing and examining the case generally and in the elucidation of technical and practical aspects of the industry, the Board was glad to receive the assistance of Mr. J. C. Barry who was until recently

Acknowledgment.

knowledge of the antimony industry and its numerous ramifications. The Board wishes to take this opportunity to express its thanks to him for his helpful and valuable co-operation and advice. Thanks of the Board are also due to Dr. Madan our Deputy Secretary, for taking all steps to ensure a speedy conclusion of this enquiry.

SHANMUKHAM CHETTY—President.

C. C. DESAI—Member-Secretary.

NAZIR AHMAD—Member.

H. L. DEY—Member.

B. K. MADAN—Deputy Secretary.



सत्यमेव जयते

APPENDICES

APPENDIX I.—Government of India, Department of Commerce, Resolution No. 218-T(55)/45, dated the 3rd November 1945.

APPENDIX II.—Sketch showing journey of the antimony ore from Chitral to Bombay.

APPENDIX III.—Chart showing sequence of manufacturing process from ore to metal at present followed by the Star Metal Refinery.

APPENDIX IV.—List of witnesses examined by the Board, the interests represented by them and the dates on which they were examined.

APPENDIX I

DEPARTMENT OF COMMERCE

RESOLUTION

TARIFFS

New Delhi, the 3rd November 1945.

No. 218-T(55)/45.—In the statement on industrial policy issued by the Government of India on the 23rd April 1945, it was announced that, pending the formulation of a tariff policy appropriate to the post-war needs and conditions of the country and the establishment of permanent machinery for the purpose, Government would set up machinery for investigating claims from industries, which have been started or developed in war-time and which are established on sound lines, to assistance or protection during the transition period. A press communique issued on the same date invited industries to address their claims to the Secretary to the Government of India in the Department of Commerce.

2. Several industries have accordingly applied for assistance or protection, and on a preliminary examination of their claims, the Government of India have come to the conclusion that applications submitted by the following industries call for a detailed examination :—

- (i) non-ferrous metals, including antimony ;
- (ii) grinding wheels ;
- (iii) caustic soda and bleaching powder ;
- (iv) sodium thiosulphate, sodium sulphite anhydrous, sodium bisulphite ;
- (v) phosphates and phosphoric acid ;
- (vi) butter colour, aerated water powder colour ;
- (vii) rubber manufactures ;
- (viii) fire hose ;
- (ix) wood screws ;
- (x) steel hoops for baling.

Other applications are under the consideration of Government, and further action in their case will be taken in due course.

3. In addition to the industries which have applied for assistance or protection, there are certain industries the starting of which was considered essential by the Government of India under conditions created by the War. Early in 1940, Government announced that specified industries promoted with their direct

with this decision, the following industries have been granted protection against unfair competition after the war.

- (i) bichromates ;
- (ii) steel pipes and tubes up to a nominal bore of 4 inches ;
- (iii) aluminium ;
- (iv) calcium chloride ;
- (v) calcium carbide ;
- (vi) starch.

Of these industries, only those engaged in the manufacture of bichromates, calcium chloride and starch have so far applied for assistance or protection during the transition period. The Government of India consider that the applications submitted by these three industries also call for immediate investigation.

4. For the purpose of these and any subsequent investigations, the Government of India have decided to set up a Tariff Board for a period not exceeding two years, in the first instance. The Board will consist of :—

PRESIDENT :

Sir R. K. Shanmukham Chetty, K.C.I.E.

MEMBERS :

Mr. C. C. Desai, C.I.E., I.C.S.

Prof. R. L. Dey, D.Sc. (London).

The Board will include one more Member whose name will be announced shortly. Mr. Desai will act as Secretary to the Board in addition to his duties as Member.

5. The Tariff Board is requested to undertake, in such order as it thinks fit, the investigation of claims put forward by the industries specified in paragraphs 2 and 3 above. In the case of each industry the Board will, after such examination as it considers necessary report whether the industry satisfies the following conditions :—

- (1) that it is established and conducted on sound business lines ; and
- (2) (a) that, having regard to the natural or economic advantages enjoyed by the industry and its actual or probable costs, it is likely within a reasonable time to develop sufficiently to be able to carry on successfully without protection or State assistance ; or
- (b) that it is an industry to which it is desirable in the national interest to grant protection or assistance and that the probable cost of such protection or assistance to the community is not excessive. Where a claim to protection or assistance is found to be established, i.e., if condition (1) and condition (2) (a) or (b) are satisfied, the Board will recommend—

In making its recommendations the Board will give due weight to the interests of the consumer in the light of the prevailing conditions and also consider how the recommendations affect industries using the articles in respect of which protection is to be granted. Since relief, to be effective, should be afforded without delay, the Board is requested to complete its enquiries with all possible expedition and to submit a report as soon as the investigation of the claim of each industry is concluded.

6. The headquarters of the Board will be at Bombay, but it will visit such other places as it thinks necessary for purposes of its enquiries. Firms and persons interested in any of these industries, or in industries dependent on the use of the products of these industries, who desire that their views should be considered, should address their representations to the Secretary to the Board.

7. Any claims hereafter received from other industries which in the opinion of the Government of India are suitable for examination by the Board will be referred to the Board in due course for examination.

8. The Government of India trust that Provincial Governments and Administrations will afford the Board all the assistance which it may require and will comply with any request for information which may be addressed to them by it.

ORDER.

ORDERED that a copy of this Resolution be communicated to all Provincial Governments, all Chief Commissioners, the several Departments of the Government of India, the Political Department, the Private and Military Secretaries to His Excellency the Viceroy the Central Board of Revenue, the Auditor-General, the High Commissioner for India in London, the Economic Adviser to the Government of India, the Director of Commercial Intelligence, Calcutta, the Indian Trade Commissioner, London, the Indian Government Trade Commissioners at New York, Buenos Aires, Toronto, Alexandria, Mombasa, Tehran and Sydney, His Majesty's Trade Commissioner in India, the American Consulate-General, Calcutta, the Canadian Trade Commissioner in India, the Australian Trade Commissioner in India, the Secretary, Tariff Board, Bombay, and all the recognised Chambers of Commerce and Associations.

ORDERED that a copy be communicated to the Government of Burma.

ORDERED also that it be published in the *Gazette of India*.

APPENDIX III

Chart showing sequence of manufacturing process from ore to metal at present followed by the Star Metal Refinery :-

ANTIMONY ORE

with antimony content of 30-40 per cent. as received from the mine.

Liquating process.

ANTIMONY CRUDE

91 per cent. Antimony.

Precipitation process.

SINGLE

90 per cent. Antimony.

Starring process.

STAR METAL 99 per cent.

APPENDIX IV

List of witnesses examined by the Board and the dates on which they were examined :—

<i>Name.</i>	<i>Date.</i>
<i>Producers :—</i>	
(1) Mr. Motichand G. Shah	19th, 20th and 21st March 1946.
(2) Mr. A. Schwarz	
(3) Mr. N. S. Gupechup	
(4) Mr. J. C. Shah	
(5) Mr. Chimanlal D. Parekh	20th and 21st March 1946.

representing Star Metal Refinery, Bombay.

Consumers :—

Mr. Krishnamurti, Assistant Superintendent, Loco and Carriage, Bombay, Baroda and Central India Railway 20th March 1946.

Mr. N. M. Ghesh, Great Indian Peninsula Railway 20th March 1946.

Mr. R. D. Char and K. G. Parameshwaran, Standard Batteries, Ltd., Bombay, 20th March 1946.

Dr. F. R. Goldschmidt, Indian Standard Metal Co., Ltd., Bombay, 20th March 1946.

Mr. D. C. Modi, Gujarati Type Foundry, Bombay .. 20th March 1946.

Importers :—

Mr. B. D. Binani and Mr. K. N. Panday, 20th March 1946.
Messrs. Pragdas Mathurdas, Bombay-Calcutta